



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0916; Product Identifier 2018-NE-33-AD; Amendment 39-19643; AD 2019-10-04]

RIN 2120-AA64

Airworthiness Directives; BRP-Rotax GmbH & Co KG Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain BRP-Rotax GmbH & Co KG (Rotax) 912 and 914 model engines. This AD was prompted by power loss and engine revolutions per minute (RPM) drop on certain Rotax 912 and 914 model engines due to a quality control deficiency in the manufacturing process of certain valve push-rod assemblies resulting in partial wear on the rocker arm ball socket and possible malfunction of the valve. This AD requires one-time inspection and, depending on the findings, replacement of the affected parts with parts eligible for installation. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact BRP-Rotax GmbH & Co KG, Rotaxstrasse 1, A-4623 Günskirchen, Austria; phone: +43 7246 601 0; fax: +43 7246 601 9130; email: airworthiness@brp.com; internet: www.flyrotax.com.

You may view this service information at the FAA, Engine and Propeller Standards

Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0916.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0916; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, 20590.

FOR FURTHER INFORMATION CONTACT: Wego Wang, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7134; fax: 781-238-7199; email: wego.wang@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Rotax 912 and 914 model engines. The NPRM published in the Federal Register on November 6, 2018 (83 FR 55502). The NPRM was prompted by power loss and engine RPM drop on certain Rotax 912 and 914 model engines due to a quality control deficiency in the manufacturing process of certain valve push-rod assemblies resulting in partial wear on the rocker arm ball socket and possible malfunction of the valve. The NPRM proposed to require a one-time inspection and,

depending on the findings, replacement of the affected parts with parts eligible for installation. We are issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2017-0208, dated October 13, 2017 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

Power loss and engine RPM drop have been reported on Rotax 912/914 engines in service. It has been determined that, due to a quality control deficiency in the manufacturing process of certain valve push-rod assemblies, manufactured between 08 June 2016 and 02 October 2017 inclusive, partial wear on the rocker arm ball socket may occur, which may lead to malfunction of the valve train.

This condition, if not detected and corrected, may lead to rough engine operation and loss of power, possibly resulting in a forced landing, with consequent damage to the aeroplane and injury to occupants.

Revision to Applicability Section

We revised paragraph (c)(4), in the Applicability section of this AD, to refer to “Rotax 912 F2, 912 F3, 912 F4, 912 S2, 912 S3, 912 S4, 914 F2, 914 F3, and 914 F4 engines (all S/Ns) on which a valve push-rod assembly has been replaced with one manufactured between June 8, 2016, and October 2, 2017,” rather than “Rotax 912 F2, 912 F3, 912 F4, 912 S2, 912 S3, 912 S4, 914 F2, 914 F3, and 914 F4 engines (all S/Ns) on which a valve push-rod assembly has been replaced between June 8, 2016, and the effective date of this AD,” as proposed in the NPRM. This change clarifies the applicability and is consistent with the MCAI and with Rotax Service Bulletin (SB) SB-

912 i-008 R1/SB-912-070 R1/SB-914-052 R1 (single document), Revision 1, dated October 12, 2017. Our proposed wording would have unnecessarily extended the applicability of this AD to all valve push-rod assemblies that were replaced on the affected Rotax engines from October 2, 2017 until the effective date of this AD.

Comments

We gave the public the opportunity to participate in developing this final rule. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the relevant data and determined that air safety and the public interest require adopting this final rule as proposed—except for minor editorial changes and the changes to the Applicability section discussed above. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Related Service Information under 1 CFR Part 51

We reviewed Rotax SB SB-912 i-008 R1/SB-912-070 R1/SB-914-052 R1 (single document), Revision 1, dated October 12, 2017. The SB describes procedures for inspection and replacement of the valve push-rod assembly and the left and right rocker arms. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 150 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspect the push-rod rocker arm ball sockets	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$12,750

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We estimate that 50 engines will need this replacement.

On-condition costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replace the valve push-rod assembly and rocker arm ball sockets	0.5 work-hours X \$85 per hour = \$42.50	\$3,000	\$3,042.50	\$152,125

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds

necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2019-10-04 **BRP-Rotax GmbH & Co KG (formerly BRP-Powertrain GmbH & Co KG; Bombardier-Rotax GmbH & Co KG; Bombardier-Rotax GmbH):** Amendment 39-19643; Docket No. FAA-2018-0916; Product Identifier 2018-NE-33-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to:

(1) BRP-Rotax GmbH & Co KG (Rotax) 912 F2, 912 F3, and 912 F4 engines, with serial number (S/N) 4 413 066 to 4 413 067, inclusive; and S/N 4 413 101 to 4 413 111, inclusive;

(2) Rotax 912 S2, 912 S3, and 912 S4 engines, with S/Ns 9 563 826 to 9 563 849, inclusive; S/Ns 9 564 301 to 9 564 508, inclusive; and S/N 9 564 510 to 9 564 534, inclusive;

(3) Rotax 914 F2, 914 F3, and 914 F4 engines, with S/Ns 4 421 581 to 4 421 597, inclusive; and S/N 4 421 701 to 4 421 833, inclusive; and

(4) Rotax 912 F2, 912 F3, 912 F4, 912 S2, 912 S3, 912 S4, 914 F2, 914 F3, and 914 F4 engines (all S/Ns) on which a valve push-rod assembly has been replaced with one manufactured between June 8, 2016, and October 2, 2017.

(d) Subject

Joint Aircraft System Component (JASC) Code 8530, Reciprocating Engine Cylinder Section.

(e) Unsafe Condition

This AD was prompted by power loss and engine revolutions per minute drop on Rotax 912 and 914 model engines due to a quality control deficiency in the manufacturing process of certain valve push-rod assemblies resulting in partial wear on the rocker arm ball socket and possible malfunction of the valve. We are issuing this AD to prevent failure of the valve push-rod assembly and the left and right rocker arms. The unsafe condition, if not addressed, could result in loss of engine thrust control and reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Visually inspect the push-rod ball sockets of each valve push-rod assembly in accordance with the Accomplishment Instructions, paragraph 3.1.2, of BRP-Rotax Service Bulletin (SB) SB-912 i-008 R1/SB-912-070 R1/SB-914-052 R1 (single document), Revision 1, dated October 12, 2017, and within the following compliance times.

(i) For engines with 160 engine flight hours (FHs) or fewer since new, inspect before exceeding 170 FHs since new, or within three months after the effective date of this AD, whichever occurs first.

(ii) For engines with greater than 160 engine FHs since new, inspect within 10 FHs, or three months after the effective date of this AD, whichever occurs first.

(2) If the inspection required by paragraph (g)(1) of this AD finds a black surface color on a valve push-rod assembly, part number (P/N) 854861, then before further flight, remove the valve push-rod assembly and the left and right rocker arm ball sockets, P/Ns 854383 and 854393, from service, and replace with parts eligible for installation.

(h) Installation Prohibition

After the effective date of this AD, do not install a valve push-rod assembly, P/N 854861, that was manufactured between June 8, 2016, and October 2, 2017, or that exhibits a black surface color on the push-rod rocker arm ball sockets, on any engine.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ECO Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Wego Wang, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7134; fax: 781-238-7199; email: wego.wang@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2017-0208, dated October 13, 2017, for more information. You may examine the EASA AD in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating it in Docket No. FAA-2018-0916.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Rotax Service Bulletin (SB) SB-912 i-008 R1/SB-912-070 R1/SB-914-052 R1 (single document), Revision 1, dated October 12, 2017.

(ii) [Reserved]

(3) For Rotax service information identified in this AD, contact BRP-Rotax GmbH & Co KG, Rotaxstrasse 1, A-4623 Günskirchen, Austria; phone: +43 7246 601 0; fax: +43 7246 601 9130; email: airworthiness@brp.com; internet: www.flyrotax.com.

(4) You may view this service information at FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the

availability of this material at NARA, call 202-741-6030, or go to:
<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on May 24, 2019.

Karen M. Grant,
Acting Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.
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